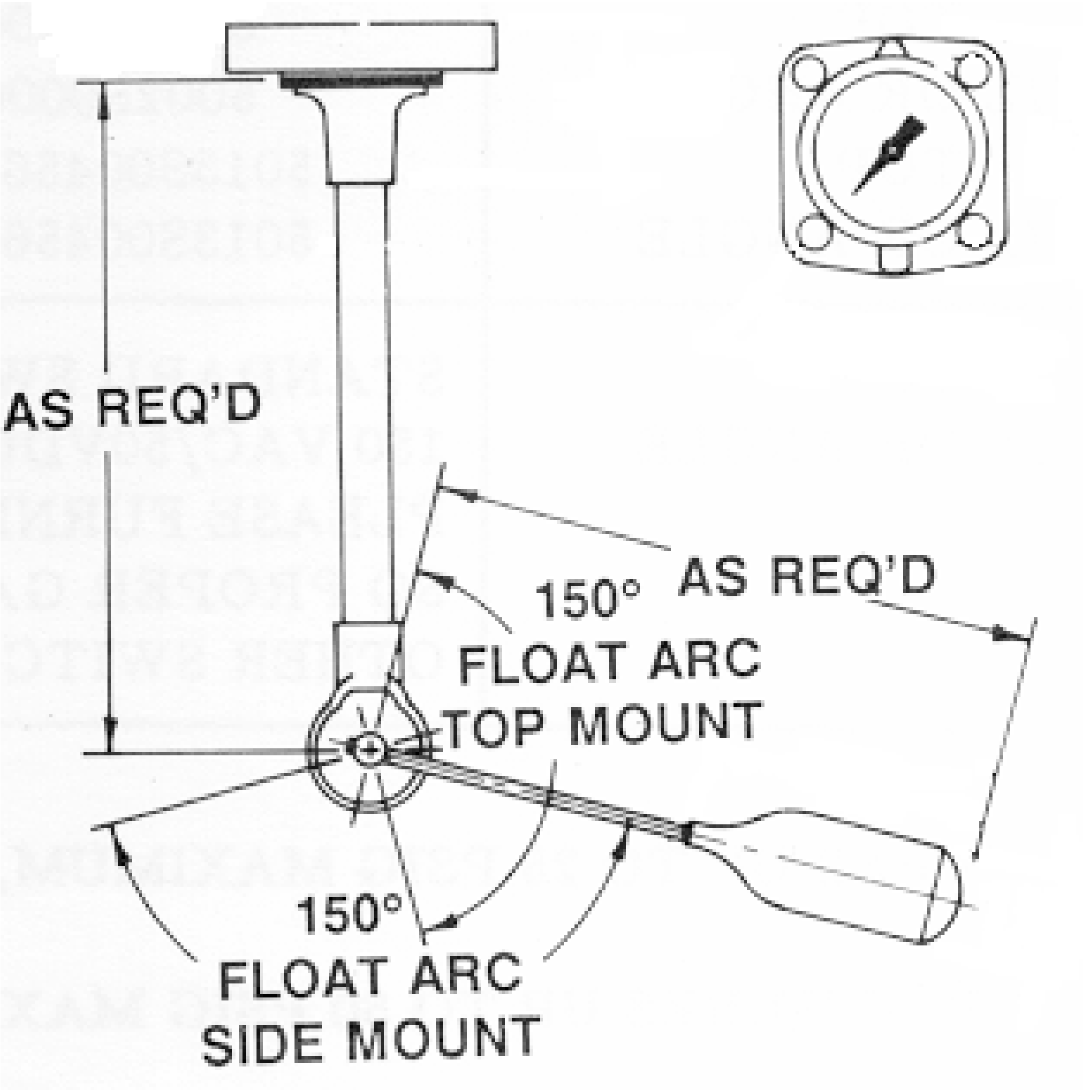
6200 SERIE

LIQUID LEVEL GAUGES

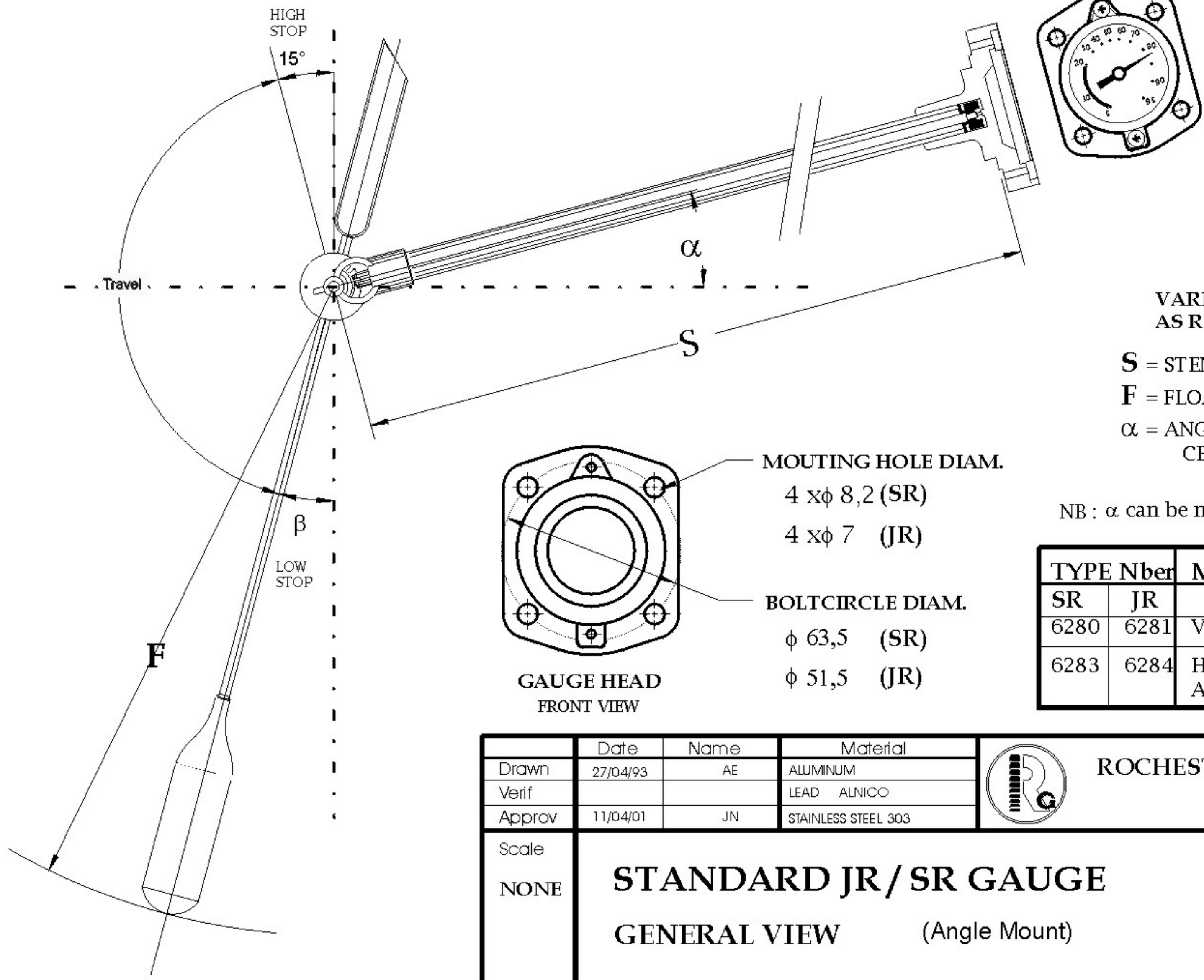


INSTALLATION INSTRUCTIONS

READ COMPLETELY BEFORE ATTEMPTING INSTALLATION

These instructions are made to assist tradesmen and others generally familiar with liquid storage tank equipment.
Consumers are not qualified to perform the installation described below.
If you have any question concerning installation or operation of the gauges, contact Rochester Gauges Int. or one of our authorised distributors for assistance.

WARNING: Improper installation or use of this product may cause serious injury or property damage.



GAUGE HEAD
FRONT VIEW

MOUTING HOLE DIAM.
4 xφ 8,2 (SR)
4 xφ 7 (JR)

BOLTCIRCLE DIAM.
φ 63,5 (SR)
φ 51,5 (JR)

VARIABLE DIMENSIONS
AS REQUIRED

S = STEM
F = FLOAT ARM
α = ANGLE TO HORIZONTAL CENTER LINE

NB : α can be negative (below horizontal CL)

TYPE Nber		MOUNT.	α	β
SR	JR			
6280	6281	VERTICAL	90°	7°
6283	6284	HORIZON. ANGULAR	0° α	15° 15°

	Date	Name	Material
Drawn	27/04/93	AE	ALUMINUM
Verif			LEAD ALNICO
Approv	11/04/01	JN	STAINLESS STEEL 303

ROCHESTER GAUGES INT. S.A.
BELGIUM

Scale
NONE

STANDARD JR / SR GAUGE

GENERAL VIEW (Angle Mount)

6200S00000

B

Description of Product

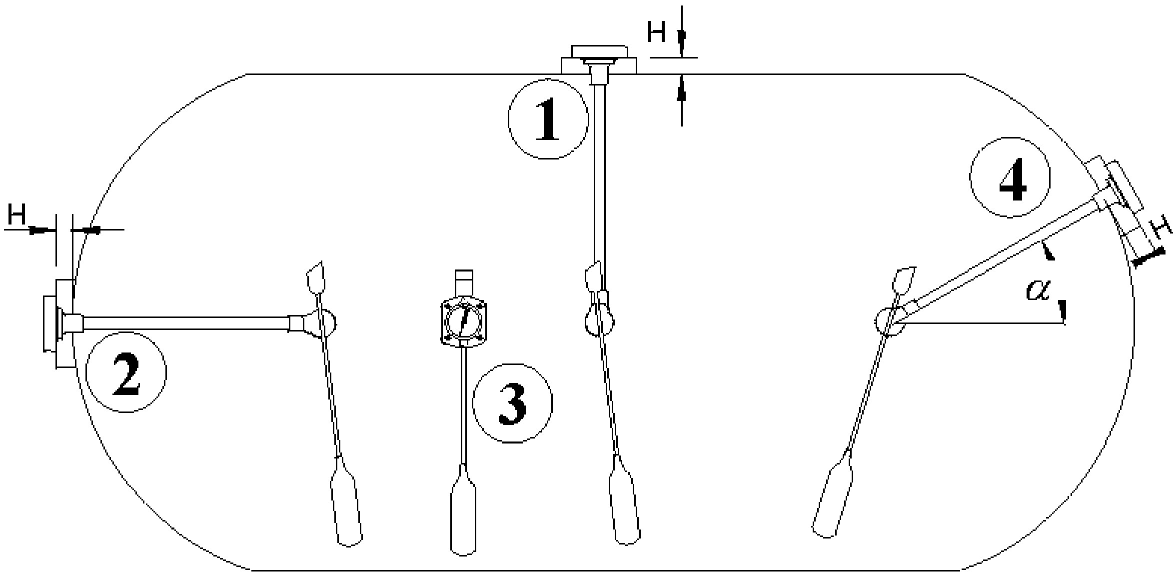
6200 Serie gauges are magnetic float gauges designed to be installed on storage tanks with diameter up to 2000mm. These items are currently used to gauge products such as LPG, Ammonia, hydraulic oils, fuel oil, etc...

These gauges are designed for pressure up to 25 bars and temperature of -20°C up to 60°C if adequate float is used (30 bars with special senior head, model M6200).

These gauges operate simply by means of a float actuating a powerful magnet inside the container which in turn provides an invisible “magnetic coupling”, through a solid head, with the magnet of the pointer in the dial. The dial may be removed and replaced quickly at any time without loss of liquid, pressure, vacuum or costly downtime.

Mounting Position

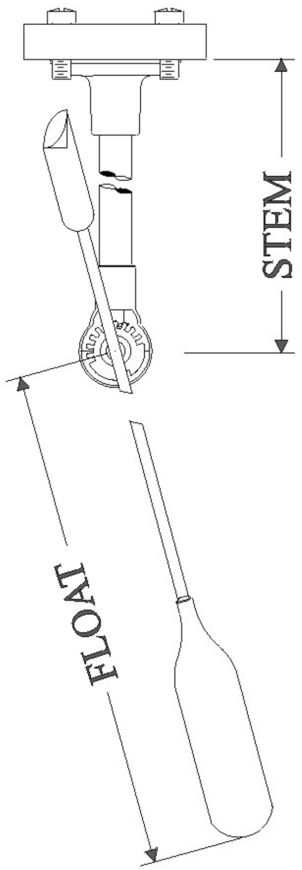
The gauge can be manufactured for top, side, end or angle mounting.



Vertical : **1** Top Mounted
Horizontal : **2** End mounted
Horizontal : **3** Side mounted
Angle : **4** Angle mounted

(Angle α for angle mounted gauge is specified from horizontal, positive above horizontal, negative below horizontal)

ROCHESTER GAUGES INTERNATIONAL s.a.



MODEL NUMBER ______

CUSTOMER ______

P.O. N° ______ QUANTITY : ______

BATCH N° ______ TYPE : Jr. Sr. Magn.

SCREW Yes No GASKET Yes No

GAUGE INTENDED FOR : ______

TANK OUTSIDE DIAMETER : ______

TANK INSIDE DIAMETER : ______

RISER : ______

MOUNTING POSITION : ______

STEM : ______

FLOAT : ______

Gauges type

These gauges can be supplied with Senior or Junior Head with direct reading (dial size Jr 40mm, Sr 58mm or 4" 100mm) or with sensor (TwinSite^{TM} dial)

Type Number	Head size	Dial	Mounting
6241/6251	Junior	TwinSite	Top
6244/6254	Junior	TwinSite	End, side, angle
6240/6250	Senior	TwinSite	Top
6243/6253	Senior	TwinSite	End, side, angle
6260	Senior	Side view	Top
6281	Junior	Direct	Top
6284	Junior	Direct	End, side, angle
6280	Senior	Direct	Top
6283	Senior	Direct	End, side, angle
6290	Senior	Direct 4"	Top
6293	Senior	Direct 4"	End, side, angle

Options: Head: Junior Brass head → prefix B
Float: Nitrophyl float → prefix C (for fuel or low pressure application)
Stainless Steel float → prefix A
Plastic or Metal head cover

Inspection of gauge

Before attempting the installation of the gauge, check if the gauge is adequate for your application. The gauges are supplied packed in a cardboard box with a sticker indicating the model, the main dimensions (stem and float) of the gauge, the mounting position, the tank dimensions for which the gauge has been manufactured and the product intended to be gauged.

a) Check of the dimensions (see attached drawing)

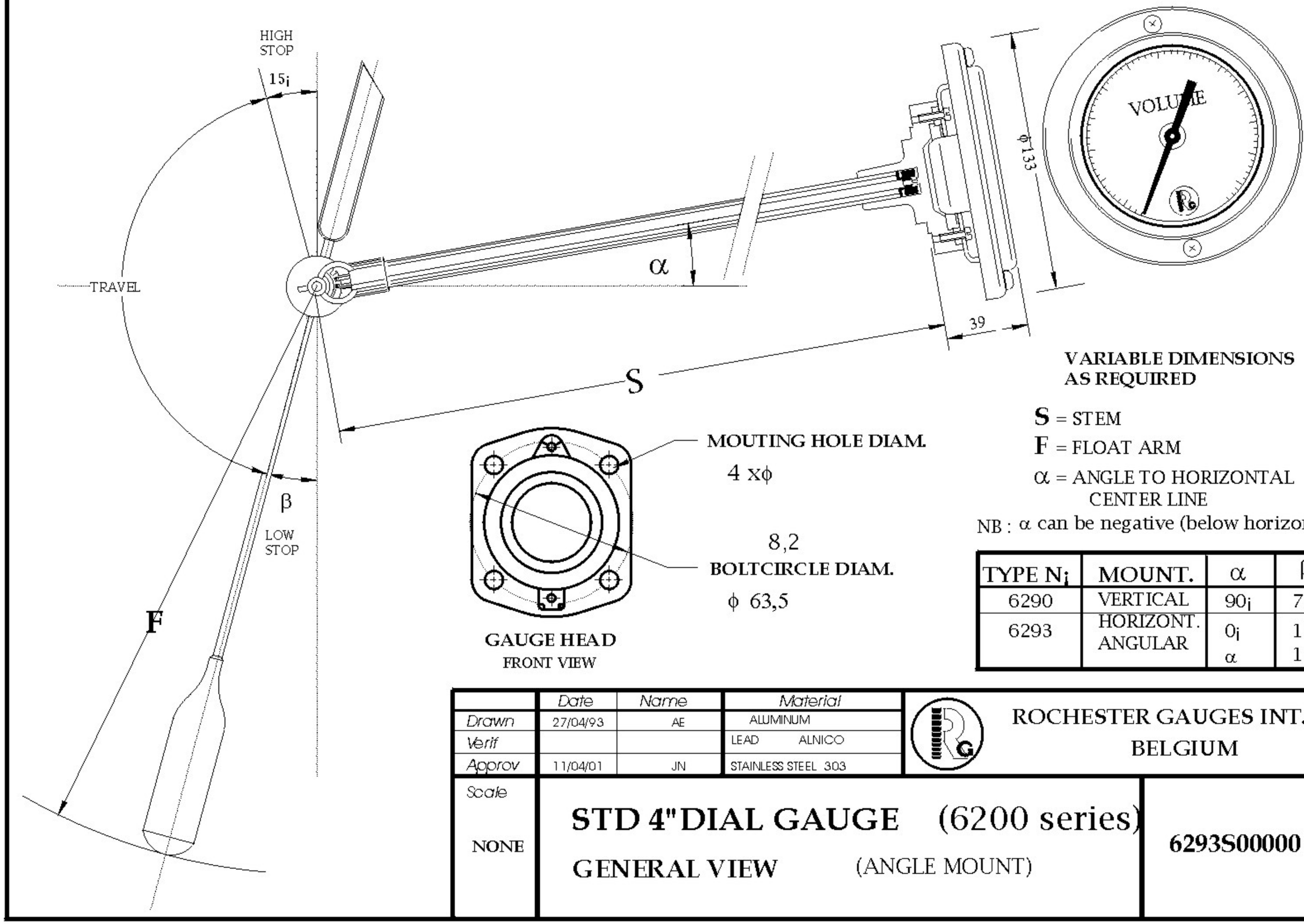
- Stem length: by design and for horizontal cylindrical tank, the pivot point of the float should be at the mid height of the tank (50% plane). Hence Stem length should be:

for top or angle mounting S = 0.5*OD + H (OD = tank outside diameter, H = riser dimension)

for end or side mounting S = 0.3*OD + H or 0.4*OD + H

However for this type of mounting the stem length is less critical, as the gauge is installed at the mid height of the tank

- Float length: the float length is function of the internal diameter (ID) of the tank, the type of dial used and the float used. For the 6200 Serie and horizontal



VARIABLE DIMENSIONS AS REQUIRED

S = STEM

F = FLOAT ARM

α = ANGLE TO HORIZONTAL CENTER LINE

NB : α can be negative (below horizontal CL)

TYPE N¡	MOUNT.	α	β
6290	VERTICAL	90¡	7¡
6293	HORIZONT. ANGULAR	0¡ α	15¡ 15¡

	Date	Name	Material
Drawn	27/04/93	AE	ALUMINUM
Verif			LEAD ALNICO
Approv	11/04/01	JN	STAINLESS STEEL 303

ROCHESTER GAUGES INT. S.A.
BELGIUM

Scale: NONE

STD 4"DIAL GAUGE (6200 series)

GENERAL VIEW (ANGLE MOUNT)

6293S00000

B

cylindrical tank, the dial is generally graduated from 5% to 95%. In this case float length should be equal to:

F = 0.428*ID + 44.5 (with alu float 6-406 of length 105mm)

F= 0.428*ID + 32 (with alu float 6-407 of length 76mm or Stainless Steel float 6045S0 of length 64mm)

F = 0.428*ID + 31 (with nitril rubber float 6-583 of length 62mm)

OR F = 0.5*ID – 10mm if above formula has a result in F > 0.5*ID – 10.

b) Check the gauge mounting position on the tank.

To check the mounting position for which the gauge has been manufactured, hold the stem in the mounting position, move the float to the horizontal plane and check the needle on the dial which should indicate 50% ± 5%.

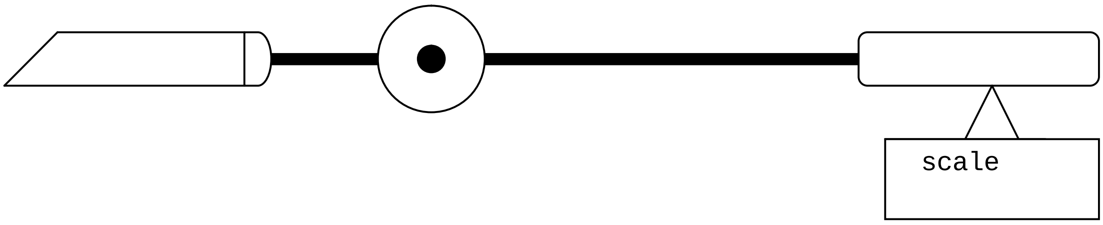
c) Check the gauge counterbalance with your application

If the float axis is equipped with a lead counterweight the float arm has been counterbalanced to gauge a product of low specific gravity. To check if the float arm has been counterbalanced to the product you intend the gauge, set the float bulb on a scale and maintain the float arm horizontally.

The weight of the float should be:

Type of float		Product to be gauged	Weight (±2gr)
6-406 Alu	L = 105mm	LPG δ = 0.55	13 gr.
6-407 Alu	L = 76mm	LPG δ = 0.55	9 gr.
6-583 Nitril rubber	L = 62mm	LPG δ = 0.55	13 gr.
6045S0 SS	L = 64mm	Ammonia δ = 0.65	13 gr.

For liquid of a different specific gravity the weight should be proportional to the specific gravity



Note

For Ammonia service never use a gauge with brass head and always use a gauge with Stainless Steel float.

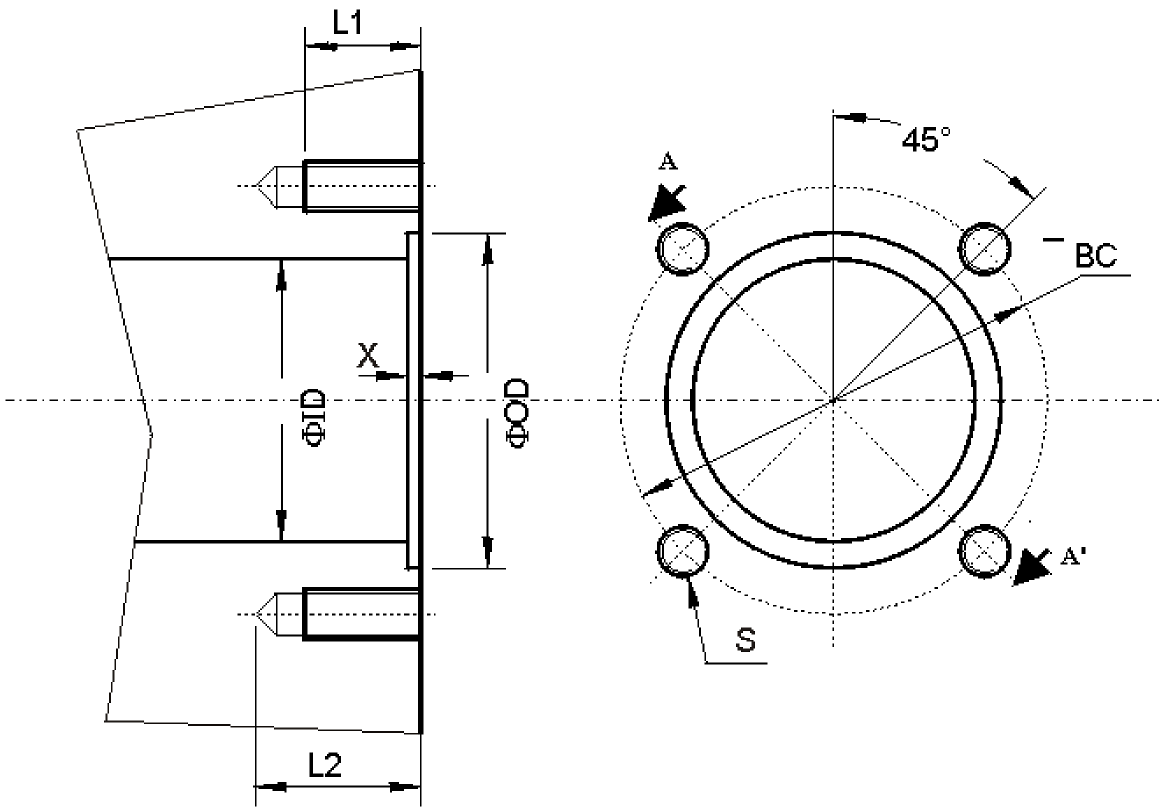
d) Check proper movement of the float

Although the gauges are 100% checked before packing, it is necessary to verify that the gauge has not been damaged in transit. In order to verify that, hold the gauge in its intended mounting position and move the float arm slowly upwards and downwards. This movement should be smooth without any heavy point.

Gauge adapter

In general an adapter is welded on the tank. Check if the adequate adapter is used for the gauge and the gasket supplied.

Head size	¯BC	¯OD	¯ID	L1	L2	GASKET TYPE	¯OD	¯ID	THIC	X	Screws S
Junior	51,6	40,5	34,1	14	20	GASKET	39,3	32,9	2,4	1,6	1/4"x7/8"-28UNF
Junior	51,6	40,0	34,0	14	20	O-RING	38,4	31,34	3,53	3,80	M 6 x 25
Senior	63,5	53,2	42	14	20	GASKET	52	40,5	2,4	1,6	5/16"x7/8"-24UNF
Senior	63,5	52,5	42	15	20	O-RING	47,93	40,87	3,53	4	M 8 x 25



Mounting of the gauge

Fit gasket onto gauge gasket seat.
Carefully insert float into adapter or coupling and work gauge's gear housing and support through adapter, being careful not to bend or damage them.
Check to see that gasket is properly seated in adapter gasket recess.
Align head for proper orientation of float inside the tank. Torque screws evenly in several steps to the desired torque value. When torquing use a crossing torque pattern.
Caution: Do not overtorque. Do not re-torque later unless leaking. Overtightening may cause damage to head and gasket.

Screw Size	Dry torque	Gasket
M6 or ¼"-28UNF	2.3 to 5.6 Nm	Buna –N
M8 or 5/16-24UNF	3.4 to 6.8 Nm	Buna-N

Marking

The lateral faces of the head are marked with the necessary data requested to identify the gauge such as batch number, C€ marks, tank data and model number.
The B in front of the batch number indicates that the gauge has been manufactured by ROCHESTER GAUGES INTERNATIONAL S.A., Belgium.

Warranty Statement

ROCHESTER GAUGES INTERNATIONAL S.A. guarantees its products for a period of 12 months from date of invoice.
This warranty is limited to our product and consists of the repair or the replacement of the product if the factory inspection finds the cause of malfunction to be defective material or workmanship. The material should be returned to our factory at purchaser's cost.
No claim for misapplication, labour, direct or consequential damage will be allowed.

Returned material procedure:

In order to efficiently process any materials that are returned, it is essential that following instructions are provided with the returned material:

- Purchaser name
- Description of material
- Batch number
- Reason for return
- Claim description
- Description of application and misfunction.

BM-AA FFFF

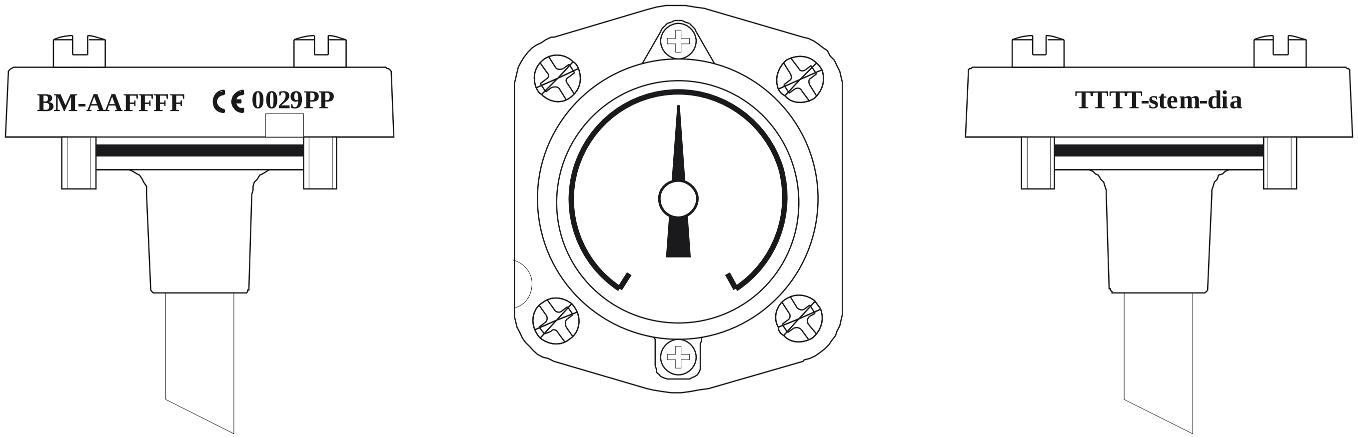
- FFFF= Batch number
- AA = Manufacturing year
- M = Manufacturing month (1 to 9, O, N, D)
- B = Manufactured by RGI Belgium

CE 0029PP

- PP = max pressure(bar)
- Notified body identification

TTTT-stem-dia

- dia = tank diameter (mm)
- stem = stem length(mm)
- TTTT = gauge type (6281, ...)



	Date	Name	Material
Drawn	27 fev 02	JN	
Verif			
Modif.	28 Jan 09	DH	

ROCHESTER GAUGES INT. S.A.
BELGIUM

Scale			
Size A4	Gauge serie 6200 PED marking view (contained in Install. Instructions 6200 series)	Ensemble PV PED marking	A B

Rev B : 1 digit Manufacturnig month: 0 to 9, O, N, D
Erase Manufacturer logo
Erase Letters height: 3mm

Rev A : Batch number is 4 digits instead of 3
Manufacturnig month is 1 digit instead of 2

Replacing Dial

READ COMPLETELY BEFORE ATTEMPTING INSTALLATION

These instructions are made to assist tradesmen and others generally familiar with liquid storage tank equipment.
Consumers are not qualified to perform the installation described below.
Improper installation or use of dial may cause serious injury or property damage.

If you have any question concerning choice, installation or operation of the dial or gauge, contact Rochester gauges Intl. or one of our authorised distributors for assistance.
Check side of gauge head for model number and ask for technical data sheet for your model.

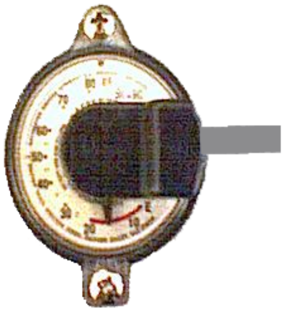
Caution: determine and install the appropriate magnetic dial based on gauge and system requirements. The dial type supplied may not be suitable for all applications and for those applications other dials are available.
The information contained herein is intended for guideline use only and the suitability of any dial or TwinSiteTM sender for a particular application must be determined by the user prior to installation.



Direct reading Std
JR or SR Dial



Side view dial



TwinSite™ Sender

WARNING:
Do not remove gauge mounting screws or bolts.
Tank contains high pressure and flammable gas.
A hazard of fire or explosion may exist if gauge mounting screws, bolts or gauge heads are loosened or removed

GUIDELINE:
Record reading on old dial, disconnect electrical connection to Twinsite;
Using a #1 Phillips screwdriver, remove two #6 screws retaining old dial chamber and remove old dial.
Install replacement dial or TwinSite™ sender assuring that dial chamber fits gauge head and torque dial mounting screws at 0.4Nm.
Compare new dial reading to recorded reading or estimated tank contents. If the new dial reading is not correct, remove dial and use a magnet near the back of the dial, rotate the pointer to approximate the expected dial reading and re-install dial.
If reading still seems incorrect, the dial may be a wrong type.

CAUTION: improper dial selection or application may result in inaccurate gauge readings. Release of tank contents as well as damage to equipment and safety hazard may result if tank is overfilled. Combustible exhaustion may occur if tank contents are less than indicated.

ROCHESTER GAUGES INTERNATIONAL S.A.
Z.I. WAVRE NORD AV. LAVOISIER, 6 1300 WAVRE BELGIUM
Tél: 32 (0) 10 24 10 10 Fax: 32 (0) 10 22 81 39 http://www.rochester-gauges.be
R.C. NIVELLES 65.461 TVA : BE 440.371.387

DECLARATION OF CONFORMITY

Original attached to the invoice

I, the undersigned, certify that the level gauge accessories for pressurised tank of a diameter up to 2000 mm of serie 6200, model

manufactured under batch n°

in our factory, 6 avenue Lavoisier, B-1300 Wavre, Belgium

are in conformity with the European Directives and Standards applicable today:

Directive 97/23/CE following modules B + D certified by:

- APRAGAZ, chaussée de Vilvoorde 156, B-1120 BRUXELLES, Belgium
- EURO QUALITY SYSTEMS, bvd de la république 50,
  F-92250 La Garenne Colombe, France

This serie has been certified by the notified body n°0029 under n° 02/BE/329
The gauges have been manufactured in conformity with following standards:

PrEN 13799, EN 549

Note: - The Directive 89/392/CE (machinery) does not apply as this equipment has to be used as part of an assembly.
- In case of use of a sensor for remote reading, the Directive 94/9/CE (ATEX) applies.

Date:

SPECIMEN

Michel DUFAYS